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10/684,460	10/15/2003	Shigeki Motoyama	SON-1907/CON	4695
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RADER FISHMAN & GRAUER PLLC LION BUILDING 1233 20TH STREET N.W., SUITE 501 WASHINGTON, DC 20036			TRAN, HENRY N	
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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/684,460

Filing Date: October 15, 2003

Appellant(s): MOTOYAMA ET AL.

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Ronald P. Kananen  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 11/2/05 appealing from the Office actions mailed 4/4/05 and 6/29/05.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows:

**WITHDRAWN REJECTIONS**

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner:

The rejection of claims 14-21 and 24-28 under the judicially doctrine of obvious-type double patenting as being unpatentable over claims 1, 2 and 4-7 of U.S. Patent No. 6,690,362 B1 issued to Motoyama et al. in view of Burk (U.S. Patent No. 5,228,562).

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

4,554,565	KITO et al.	11-1985
5,228,562	BURK	7-1993
6,690,362	MOTOYAMA et al.	2-2004
WO 94/14112	ITOH et al.	Publication Date: 23 June 1994.

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

*(9)(a) Claim Rejections - 35 USC § 103*

Claims 14-21, 24-26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over BURK in view of ITOH et al. and of KITO et al.

(9)(a)(i) Regarding claim 14, Burk teaches an electronic apparatus (a touch screen) having an input device 10 (a membrane switch 10), the input device comprising: a sheet-type switch portion having a first sheet 12 (a top membrane 12), a second sheet 14 (a bottom membrane 14), a first electrode 16 (a conductive lower surface 16 of the top membrane 12), and a second electrode 18 (a conductive upper surface 18 of the bottom membrane 14), said first and second electrodes being between said first sheet and said second sheet, said first electrode being structurally adapted to come into electrical contact with said second electrode (Burk, Figs.2 and 5, shows that the top membrane 12 and the bottom membrane 14 are arranged with the conductive lower surface 16 and the conductive upper surface 18 facing each other so that, during operation, when the top membrane 12 is depressed into contacting the bottom membrane

14, the conductive lower surface 16 of the top membrane 12 is being adapted to come into electrical contact with the conductive upper surface 18 of the bottom membrane 14; see column 2, lines 3-14; column 4, lines 32-38; col. 5, lines 31-36; and col. 8, lines 48-55.

However, Burk does not teach a reversible chromatic layer with the first sheet being between the reversible chromatic layer and the first electrode.

Itoh teaches a reversible chromatic layer 50 (a color-change layer 50) located on a front surface of a first sheet 1(a conductive layer 1) of a sheet-type switch input portion (sensor means 1-4) of an input device 11. See Fig. 1; abstract, page 8, line 19 to page 9, line 13.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the reversible chromatic layer 50 as taught by Itoh with the sheet-type switch as taught by Burk; specifically, placing the first sheet being between the reversible chromatic layer and the first electrode; because this would provide a simple and reliable input device, which is capable of temporarily and optically exhibiting a change in the color state of the position on the surface where the surface has been touched. See Itoh; page 3, lines 18-22; and page 7, lines 1-12.

Burk in view of Itoh (hereinafter “Burk-Itoh”) teaches generally all except: “a reversible chromatic layer having at least two coatings, each of said at least two coatings being structurally adapted to exhibit thermochromism”

Kito, Figs. 1-7, teaches a reversible chromatic layer that has two coatings: a first reversible thermochromic image layer 3-1 and a second reversible thermochromic image layer 4-1; wherein, each of the two coatings being structurally adapted to exhibit color changes in

response to temperature change. See column 1, lines 59-60; column 2, lines 38-44, and lines 61-65.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the reversible chromatic layer having two thermochromic coatings as taught by Kito for the reversible chromatic layer of the Burk-Itoh device because this would provide an improved display input device capable of exhibiting thermochromism with different visual densities and color changes for enhancing the device functionality and reliability. See Kito, column 1, lines 6-18; and col. 4, lines 47-55.

By this rationale, claim 14 is rejected.

(9)(a)(ii) Regarding claims 15, 16 and 17, Burk further teaches: the sheet-type switch portion includes a spacer 20 between said first sheet 12 and said second sheet 14, said spacer being adjacent said first and second electrodes 16 and 18; wherein said spacer is formed from an insulating material, see col. 6, lines 1-9; and wherein a void 42 (raised dielectric projections 42) is between said spacer and another spacer, said first and second electrodes being disposed within said void, see Figs. 1 and 5, and col. 8, lines 44-55.

Claims 15-17 are dependent upon the base claim 14, and are therefore rejected on the same reasons set forth in claim 14, and by the reasons noted above.

(9)(a)(iii) Regarding claim 18, Kito further teaches that the first coating 3-1 has a temperature-dependent chromatic characteristic different than a second coating 4-1, see Fig. 7, column 1, lines 56-60, and column 2, lines 45-60.

(9)(a)(iv) Regarding claim 19, Kito shows the first coating 3-1 is laterally adjacent to the second coating 4-1, see Fig. 4.

(9)(a)(v) Regarding claim 20, Kito shows the first coating 3-1 is in contact with said second coating 4-1, see Fig. 4.

(9)(a)(vi) Regarding claim 21, Kito shows the second coating 4-1 is on the first coating 3-1, a portion of said second coating being removed to expose said first coating, see Fig. 2.

(9)(a)(vii) Regarding claims 24 and 25, Itoh teaches that the reversible chromatic layer is located on a front surface of the sheet-type input portion and an input operation is effected by direct contact with the reversible chromatic layer. Itoh, Fig. 1, page 1, lines 3-7, and page 8, line 19 to page 9, line 13.

(9)(a)(viii) Regarding claims 26-28, Burk further teaches that the first sheet or both sheets may be structurally adapted to be plastically deformed; and an input operation is effected by direct contact with a top sheet. See column 1, lines 39-43, and col. 8, lines 52-55.

Claims 18-21 and 24-28 are dependent upon the base claim 14, and are therefore rejected on the same reasons set forth in claim 14, and by the reasons discussed above.

#### **(10) Response to Argument**

Appellant's arguments provided in pages 5-10 of the Appeal Brief filed 11/2/05 have been fully considered but they are not persuasive because of the following reasons.

##### **(10)(a) Claims 14, 18-21 and 24-25**

Appellant argued that the claimed invention of claim 14 includes the features of: a sheet-type switch portion (62) having a first sheet (62A), a second sheet (62B), a first electrode (63A), and a second electrode (63B), said first and second electrodes (63A, 63B) being between said first sheet (62A) and said second sheet (62B), said first electrode (63A) being structurally adapted to come into electrical contact with said second electrode (63B); and

a reversible chromatic layer (60) having at least two coatings (60A, 60B), each of said at least two coatings (60A, 60B) being structurally adapted to exhibit thermochromism, said first sheet (62A) being between said reversible chromatic layer (60) and said first electrode (63A) (See Fig. 5); whereas, Burk fails to disclose, teach or suggest y-axis electrodes 26a and 26b being structurally adapted to come into electrical contact with two x-axis electrodes 30a and 30b; further, Itoh fails to disclose, teach or suggest: (i) first and second electrodes between a first sheet and a second sheet, and (ii) a first electrode structurally adapted to come into electrical contact with a second electrode; and further also, Kito fails to disclose, teach or suggest first and second electrodes between a first sheet and a second sheet.

The examiner respectfully disagrees because of the rejections recited in sections (9)(a)(i) and (9)(a)(iii) to (9)(a)(viii) discussed above. Particularly, Burk patent is relied upon for the claimed features: a sheet-type switch portion 10 (a membrane switch 10), having a first sheet 12 (a top membrane 12), a second sheet 14 (a bottom membrane 14), a first electrode 16 (a conductive lower surface 16 of the top membrane 12), and a second electrode 18 (a conductive upper surface 18 of the bottom membrane 14), said first and second electrodes (16, 18) being between said first sheet (12) and said second sheet (14), said first electrode (16) being structurally adapted to come into electrical contact with said second electrode (18). See sections (9)(a)(i) above.

Itoh publication is relied upon for the use of a reversible chromatic layer 50 (a color-change layer 50) located on a front surface of a first sheet 1 of a sheet-type switch input portion 11. See section (9)(a)(i).

Kito patent is relied upon for the use of a reversible chromatic layer having at least two coatings: a first reversible thermochromic image layer 3-1 and a second reversible thermochromic image layer 4-1; wherein, each of the two coatings being structurally adapted to exhibit color changes in response to temperature change. See section (9)(a)(i).

Burk in view of Itoh and of Kito would provide the claimed invention. See section (9)(a)(i).

Clearly, (i) Burk patent is not relied upon for y-axis electrodes 26a and 26b being structurally adapted to come into electrical contact with two x-axis electrodes 30a and 30b; (ii) Itoh publication is not relied upon for first and second electrodes being between a first sheet and a second sheet and a first electrode structurally adapted to come into electrical contact with a second electrode; and (iii) Kito patent is not relied upon for first and second electrodes being between a first sheet and a second sheet as argued by the appellant.

Accordingly, Appellant's arguments with respect to claim 14 are not persuasive; and the rejection of claim 14, and therefore the claims 14, 18-21 and 24-25, should be sustained.

#### **(10)(b) Claims 15-17**

Appellant argued that the claimed invention of claims 15-17 comprises the limitations of the base claim 14, further comprises the feature of claim 15: the sheet-type switch portion includes a spacer (62C) between said first sheet (62A) and said second sheet (62B), said spacer (62C) being adjacent said first and second electrodes (63A, 63B) (See Fig. 5); Whereas, Burk fails to disclose, teach or suggest the top membrane 12 and the bottom membrane 14 being between the nonconductive adhesive strips 60 and the conductive strips 64 (Burk at Figure 5);

further, Itoh and Kito fail to disclose, teach or suggest the features that are absent from within Burk.

The examiner respectfully disagrees because of the rejection recited in section (9)(a)(ii) discussed above. Particularly, Burk patent teaches the use of a peripheral intermediate circuit spacer 20, which is disposed between the first sheet 12 and the second sheet 14, and said spacer being adjacent said first and second electrodes 16 and 18. It is noted that the examiner does not rely upon Itoh or Kito patent for the spacer claimed in claims 15-17. See section (9)(a)(ii).

Accordingly, Appellant's arguments are not persuasive; and the rejection of claims 15-17 should be sustained.

#### **(10)(c) Claim 26**

Appellant argued that the claimed invention of claim 26 comprises the limitations of the base claim 14, further comprises the feature of claim 26: said first sheet (62A) is structurally adapted to be plastically deformed; whereas, Burk fails to disclose, teach or suggest the presence of a first sheet, as claimed; further, Itoh and Kito fails to disclose, teach or suggest the features that are absent from within Burk.

The examiner respectfully disagrees because of the rejection recited in section (9)(a)(viii) discussed above. Particularly, Burk teaches that the first sheet is structurally adapted to be plastically deformed (the top membrane (first sheet) being made from a flexible material, ... flexible dielectric sheet, see column 1, lines 39-44; or a polyester plastic film, see column 5, lines 21-24); and Itoh and Itoh patents are not relied upon for the claimed limitation of claim 26. See section (9)(a)(viii).

Accordingly, Appellant's arguments with respect to claim 26 are not persuasive; and the rejection of claim 26 should be sustained.

**(10)(d) Claim 28**

Appellant argued that the claimed invention of claim 28 comprises the limitations of the base claim 14, further comprises the feature of claim 28: said first sheet (62B) is structurally adapted to be plastically deformed; whereas, Burk fails to disclose, teach or suggest the presence of a second sheet, as claimed; further, Itoh and Kito fails to disclose, teach or suggest the features that are absent from within Burk.

The examiner respectfully disagrees because of the rejection recited in section (9)(a)(viii) discussed above. Particularly, Burk teaches that the second sheet is made from flexible dielectric sheet ("both membranes are made from flexible electric sheets", see column 1, lines 42-44; or "the bottom membrane 14 may be constructed from any dielectric material", including rigid sheets of plastic, see column 5, lines 24-27); and Itoh and Itoh patents are not relied upon for the claimed limitation of claim 28. See section (9)(a)(viii).

Accordingly, Appellant's arguments with respect to claim 28 are not persuasive; and the rejection of claim 28 should be sustained.

**(10)(e) Claims 19, 20, 21, 24, 25 and 27**

Appellant argued that the claims 19, 20, 21, 24, 25 and 27, each stands or falls alone, see section VII. ARGUMENT, Grouping of claims. However, the appellant fails to argue separately.

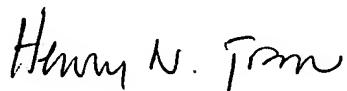
Claims 19, 20, 21, 24, 25 and 27 should be treated as belong to the group of claims 14, 18-21, and 24-25.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



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